

horizon of the present specimen may be taken as an almost certain indication of its distinctness from that form, I propose to regard it as representing a new species, under the name of *T. majori*. In the absence of a specimen of the humerus of *T. lartetianus* available for comparison, I am, however, unable to point out the distinctive differences of the present bone.

#### UNDETERMINED SPECIMENS.

Among the undetermined specimens there are several complete bones undoubtedly referable to small Passerines, although the materials available to me do not admit of any satisfactory attempts at their generic discrimination. In figure 15 of Plate XLI. I have, however, figured a left humerus which may be Picarian, in the hope that some one better acquainted with the osteology of these groups of birds may be able to determine its affinities.

#### EXPLANATION OF PLATE XLI.

- Fig. 1. *Strix sancti-albani*. Back view of distal half of the right tibia.  
 2. *Strix sancti-albani*. Front view of the distal portion of the right tibia.  
 3, 3a. *Strix sancti-albani*. Front and back views of proximal half of the left tarso-metatarsus.  
 4, 4a. *Strix sancti-albani*. Front and lower views of the distal portion of the left tarso-metatarsus.  
 5, 5a. *Phasianus altus*. Anterior and inner aspects of proximal portion of the left tarso-metatarsus.  
 6. *Phasianus altus*. Palmar aspect of distal extremity of the left humerus.  
 7. *Phasianus altus*. The left ulna.  
 8. *Phasianus altus*. The left metacarpus.  
 9, 9a. *Palæortyx edwardsi*. Palmar and posterior aspects of right humerus. x, tricipital fossa.  
 10. *Palæortyx edwardsi*. Anterior aspect of the imperfect right tarso-metatarsus.  
 11. *Palæortyx maxima*. Anterior aspect of the slightly imperfect right coracoid.  
 12. *Palæortyx grivensis*. Posterior aspect of the right humerus.  
 13. *Palæortyx*, sp. inc. Front view of the left tarso-metatarsus.  
 14. *Totanus majori*. Posterior aspect of the left humerus. x, tricipital fossa.  
 15. Posterior aspect of the left humerus of an undetermined (? Picarian) bird.

All the specimens were obtained from the Middle Miocene of Grive-St.-Albau, and are drawn of the natural size.

4. Descriptions of new Reptiles and Batrachians obtained in Borneo by Mr. A. Everett and Mr. C. Hose. By G. A. BOULENGER.

[Received June 2, 1893.]

(Plates XLII.-XLIV.)

DRACO MAXIMUS. (Plate XLII. fig. 1.)

Head small; snout as long as the diameter of the orbit; nostril directed upwards, perfectly vertical; tympanum covered with



1a.

2a.

1.

2.



3



4a.



2a.



4.



1a.



2.



1





scales; head-scales very small; ten granular scales across middle of interorbital region, sixteen or seventeen across supraocular region; a  $\Lambda$ -shaped series of enlarged scales on the forehead; fourteen upper labials. The male's gular appendage once and a half the length of the head, with moderate-sized scales on its distal portion. A slight nuchal fold, but no crest. Dorsal scales equal, keeled, a little smaller than ventrals; four widely separated, enlarged, erect, keeled scales on each side of the back. The fore limb extends beyond the tip of the snout, the hind limb to the axilla. Greyish above, head speckled with black; wing-membranes black above with light longitudinal streaks, colourless beneath; throat blackish, with round white spots.

	millim.
Total length.....	365
Head.....	25
Width of head.....	17
Body.....	115
Fore limb.....	58
Hind limb.....	70
Tail.....	225

A single male specimen from Mt. Dulit, 2000 feet (*Hose*).

*DRACO MICROLEPIS.* (Plate XLII. fig. 2.)

Head small; snout slightly shorter than the diameter of the orbit; nostril directed upwards, perfectly vertical; tympanum naked, smaller than the eye-opening; head-scales very small; six or seven scales across middle of interorbital region, fourteen or fifteen across supraocular region; scales on upper surface of snout subequal; fourteen upper labials. The male's gular appendage as long as the head, with moderate-sized scales. No nuchal fold or crest. Dorsal scales equal, keeled, a little smaller than ventrals; a few widely separated, enlarged, keeled scales on each side. The fore limb reaches with the whole hand beyond the tip of the snout, the hind limb to the shoulder. Pale grey-brown above, with dark spots and marblings; wing-membranes above with black marblings forming five rather ill-defined transverse bands, beneath colourless; base of gular appendage and inner surface of lateral wattles purplish red; a large black spot on each side of the gular appendage in the male.

	millim.
Total length.....	218
Head.....	15
Width of head.....	9
Body.....	63
Fore limb.....	38
Hind limb.....	47
Tail.....	140

Two specimens, male and female, from Merabah, North Borneo (*Everett*).

## SIMOTES ANNULIFER.

Nasal divided; portion of rostral seen from above slightly shorter than its distance from the frontal; suture between the internasals slightly shorter than that between the præfrontals; frontal as broad as long, longer than its distance from the end of the snout, shorter than the parietals; a small loreal; one præ- and two postoculars; temporals 1+2; seven upper labials, third and fourth entering the eye; four lower labials in contact with the anterior chin-shields, which are longer than the posterior. Scales in 15 rows. Ventrals 153; anal entire; subcaudals 49. Brown above, with 26 black annuli on the back, enclosing large oval yellowish-brown spots; sides black-spotted, with vertical and oblique yellowish lines; head yellowish brown above, with a dark brown transverse bar across the forehead, passing through the eye, a large **A**-shaped marking from the frontal shield to the nape, and an oblique bar on the temple; labials, chin, and throat black-spotted; lower parts white, with a series of small black spots on each side.

Total length 160 millim.; tail 30.

A single young specimen from North Borneo (*Everett*).

## OLIGODON EVERETTI.

Nasal divided; portion of rostral seen from above slightly shorter than its distance from the frontal; suture between the internasals shorter than that between the præfrontals; frontal longer than its distance from the end of the snout, slightly shorter than the parietals; loreal very small, longer than deep; one præ- and two postoculars; temporals 1+2; seven upper labials, third and fourth entering the eye; four lower labials in contact with the anterior chin-shields, which are longer than the posterior. Scales in 15 rows. Ventrals 154; anal entire; subcaudals 46. Slaty grey above, with three blackish-brown stripes, the middle one three scales wide and enclosing a series of small yellowish-brown rhomboidal spots; head brown above, with two chevron-shaped black bands, the anterior passing through the eyes, the posterior with the point on the frontal shield; uniform coral-red beneath, the outer ends of the ventral shields black.

Total length 370 millim.; tail 70.

A single female specimen from Mt. Kina Balu (*Everett*).

## CALAMARIA BALUENSIS.

Rostral a little broader than deep, visible from above; frontal nearly twice as long as broad, not twice as broad as the supraocular, as long as the parietals; eye rather large, its diameter much greater than its distance from the mouth; one præ- and one postocular; five upper labials, third and fourth entering the eye; symphyisial in contact with the anterior chin-shields; both pairs of chin-shields in contact with each other. 13 rows of scales. Ventrals 175; anal entire; subcaudals 28. Tail ending

in a point. Brown above, with small black spots; an interrupted black streak along each side of the head and neck, passing through the eye; upper lip and lower parts white; belly with three longitudinal series of small black spots; a black line along the lower surface of the tail.

Total length 340 millim.; tail 33.

A single male specimen from Mt. Kina Balu (*Everett*).

#### CALAMARIA EVERETTI.

Rostral broader than deep, well visible from above; frontal once and a half as long as broad, not twice as broad as the supra-ocular, shorter than the parietals; one præ- and one postocular; eye rather large, its diameter much greater than its distance from the mouth; five upper labials, third and fourth entering the eye; two pairs of chin-shields in contact with each other; first lower labial in contact with its fellow behind the symphysial. Scales in 13 rows. Ventrals 144; anal entire; subcaudals 23. Tail ending in a point. Coloration quite similar to that of *C. sumatrana*. Edeling. Brown above with longitudinal series of darker spots, forming two lines along each side; each scale of the outer row white in the middle, dark brown on the borders; nape dark brown, followed by a yellow collar; upper surface of head brown, spotted with darker; lower parts uniform yellowish, with a dark line along the middle of the tail.

Total length 100 millim.; tail 10.

A single young specimen from Sarawak (*Everett*).

#### RANA CAVITYMPANUM. (Plate XLIII. fig. 1.)

Vomerine teeth in two slightly oblique transverse groups between the choanæ; latter of moderate size. Head moderate, as long as broad; snout short, rounded, not projecting, with angular canthus rostralis and deeply concave loreal region; nostril slightly nearer the eye than the tip of the snout; interorbital space narrower than the upper eyelid; tympanum distinct, deeply sunk, three-fifths the diameter of the eye. Fingers moderate, first extending slightly beyond second; toes moderate, entirely webbed; disks well developed, about half the diameter of the tympanum; subarticular tubercles rather small; a very small, oval inner metatarsal tubercle, not quite one third the length of the inner toe. Hind limb very long, as in *R. whitcheadi*; tibia two-thirds length of head and body. Skin smooth; no glandular lateral fold. Pale grey-brown above, a broad dorsal area blackish brown, sharply defined on the sides; a dark bar between the eyes; a black streak from the lip to the shoulder, passing through the nostril and eye and above the tympanum; lips with black spots; limbs with narrow dark brown cross-bars; lower parts white. Male with an external vocal sac on each side of the throat, below the commissure of the jaws; no humeral gland; inner finger thickened at the base.

From snout to vent 45 millim.

A single male specimen from Kina Balu (*Everett*).

I am glad to be able to supplement this description of the adult with an account of the very remarkable larval characters furnished by a specimen, undoubtedly of the same species, at the close of the larval period, obtained by Mr. Everett at Bongon, N. Borneo.

The breast is covered with a large sucking-disk, free on its borders, truncate in front. The lips are much developed, not fringed, and armed with numerous series of horny teeth forming 3 uninterrupted and 8 paired rows on the upper lip, and 4 uninterrupted and 1 interrupted rows in the lower lip, disposed as shown in the figure. The horny beak is formed of an upper and a lower mandible, both of which are angular, smooth, and very finely denticulate at the edge. The larva is so far advanced that I am unable to say anything of the other larval characters. But in the important points of the structure of the mouth and ventral disk it shows the greatest resemblance to some hitherto undetermined larvæ from Bantam, Java, which I described and figured in 1882 (Cat. Batr. Ecaud. p. 89). At that time the only Frog known to inhabit Java that possessed fully webbed toes dilated into large disks, as shown by one of the larvæ, was *Rhacophorus reinwardti*; and I therefore referred them "provisionally, not without doubt," to that species. That this reserve was warranted, is shown by the discovery in Java soon after of a Frog, *Rana masonii*, Blgr. (= *jerboa*, Gthr.), agreeing in the above points with the larvæ in question, which I have now no doubt belong to it. Numerous larvæ of an allied species, *R. whiteheadi*, Blgr., at all stages of development, hence easily determinable, were collected by Mr. Everett in mountain-streams flowing into the Sarawak and Baram Rivers and at Bongon. They differ, however, from the larva above described in having both upper and lower mandible formed of two pieces, separated in the middle line by a considerable interspace; these horny pieces differ besides in being ribbed and strongly toothed. Somewhat similar larvæ, but with the lower mandible formed of a single piece, have been recently described and figured by Mocquard (Nouv. Arch. du Mus. 3, ii. 1890, p. 154, pl. xi. fig. 4) in his paper on the Reptiles and Batrachians of Kina Balu and referred by him, rightly I think, to his *Ixalus nubilus* (= *Rana natatrix*, Gthr.). Another larva with ventral disk, and agreeing very closely in the buccal characters with that of *R. jerboa* and *cavitympanum*, was obtained by M. Fea in the Kakhien hills, Upper Burma, and referred by me to *Rana latopalmata*, Blgr. (*afghana*, Gthr.). I have since found three specimens of the latter larva, from Darjeeling, in the late Mr. Day's collection. We are therefore now acquainted with five species with a ventral disk in the larval stage, and all five belong to species of the genus *Rana* in which the toes are fully webbed and the digits strongly dilated. They may be distinguished by means of the following synopsis:—



A. Beak formed of two pieces, an upper and a lower, feebly denticulate, not ribbed; lower lip not fringed.

- a. Series of labial teeth  $\frac{3}{1} \frac{3}{1}$  ..... *R. jerboa*.
- b. Series of labial teeth  $\frac{5}{1} \frac{5}{1}$  ..... *R. latopalmata*.
- c. Series of labial teeth  $\frac{8}{1} \frac{8}{1}$  ..... *R. cavitympanum*.

B. Beak formed of three or four pieces, toothed, ribbed on its outer surface; lower lip with a fringe of papillæ.

- a. Lower mandible formed of a single piece..... *R. natatrix*.
- b. Lower mandible formed of two pieces, like the upper ..... *R. whiteheadi*.

#### RHACOPHORUS OTILOPHUS. (Plate XLIV.)

Vomerine teeth in two small oblique series close to the inner anterior angle of the choanæ, which are exceedingly large. Head much depressed, large, a little broader than long; supratemporal region roofed over by rugose dermo-ossification; frontoparietals rugose; a strong, spinose, bony crest above the tympanum; a spine at the angle of the jaws; snout pointed, a little longer than the diameter of the orbit; nostrils close to the tip of the snout; canthus rostralis sharp, loreal region deeply concave; forehead concave; interorbital space a little broader than the upper eyelid; tympanum nearly as large as the eye. Fingers long, with rudimentary web, the tips dilated into rather large disks; toes two-thirds webbed, disks smaller than those of fingers. The tibio-tarsal articulation reaches between the eye and the nostril. Skin of back finely, of belly and lower surface of thighs coarsely granulate; heel with a small triangular dermal appendage. Pale olive above, with dark grey spots and longitudinal streaks, much as in the *quadrilineatus*-variety of *R. leucomystax*; hind limbs with dark cross-bars, which are of an intense black and close together on the concealed surfaces of the hind limb. Male with internal vocal sacs.

From snout to vent 80 millim.

A single male specimen from Bongon, N. Borneo (*Everett*).

This is a most remarkable form, allied to *R. leucomystax* but with the cranial dermo-ossification carried considerably farther, and reproducing pretty nearly the stage reached in the genus *Bufo* by *B. typhonius*, in the genus *Hyla* by *H. lichenata*, in the genus *Nototrema* by *N. oviferum*.

I am fortunately again able to supplement the description of a new Frog with that of its larva, several specimens at all the middle and later stages of development having been collected by Mr. Everett in the same locality as the adult.

Length of body once and a half to once and two-thirds its width,

three-fifths to four-fifths the length of the tail. Nostrils nearer the end of the snout than to the eyes; latter lateral, visible from above and from below, equidistant from the spiraculum and the end of the snout or a little nearer the former; distance between the eyes twice and a half to three times that between the nostrils, and twice and one-fourth to twice and one-third the width of the mouth. Spiraculum on the left side, directed upwards and backwards, equidistant from the end of the snout and the anus. Anus opening on the right side, close to the body and above the lower edge of the tail, as in *Hyla*. Tail twice and one-third to thrice as long as deep, acutely pointed; the depth of the muscular portion about three-fifths the total depth.

Mouth as in a typical *Rana*. Beak black; sides and lower edge of the lip fringed with papillæ; upper lip with a long series of fine horny teeth, followed on each side by three series; three uninterrupted series of teeth on the lower lip.

Total length of largest specimen 80 millim.; body 29; width of body 21; length of tail 51; depth of tail 17.

#### EXPLANATION OF THE PLATES.

##### PLATE XLII.

- Fig. 1. *Draco maximus*, p. 522.  
 Fig. 2. *Draco microlepis*, p. 523.  
 a. Side view of head of male.

##### PLATE XLIII.

- Fig. 1. *Rana cavitympanum*, p. 525.  
 a. Vomerine teeth.  
 Fig. 2. Larva of *Rana cavitympanum*, p. 526.  
 a. Mouth.  $\times 3$ .  
 Fig. 3. Mouth of larva of *Rana latopalmata*, p. 526.  $\times 4$ .  
 Fig. 4. Larva of *Rana whiteheadi*, p. 526.  
 a. Mouth.  $\times 5$ .

##### PLATE XLIV.

- Rhacophorus otitophus*, p. 527.  
 a. Side view of head; b. Vomerine teeth; c. Larva; d. Mouth.  $\times 6$ .

June 20, 1893.

Sir W. H. FLOWER, K.C.B., LL.D., F.R.S., President, in the  
 Chair.

Mr. Sclater exhibited two eggs of the Cape Coly (*Colius capensis*) laid in the Society's Gardens, and made the following remarks:—

For some time past we have had three examples of this Coly in one of the large cages in the Parrot House. As they showed a disposition to build, a basket-nest was placed in the cage, to which the birds made additions from materials supplied to them. The